

State of Illinois
Department of Transportation
Bureau of Materials
Springfield

POLICY MEMORANDUM

Revised: February 9, 2018

6-08.3

This Policy Memorandum supersedes number 6-08.2 dated July 1, 2015

TO: REGIONAL ENGINEERS AND HIGHWAY BUREAU CHIEFS
AGGREGATE, HOT-MIX ASPHALT (HMA), AND
PORTLAND CEMENT CONCRETE (PCC) PRODUCERS

SUBJECT: MINIMUM PRIVATE LABORATORY REQUIREMENTS FOR
CONSTRUCTION MATERIALS TESTING OR MIX DESIGN

1.0 SCOPE

This policy governs the minimum qualifications for materials **Private Quality Control (QC)** and **Quality Assurance (QA) Laboratories** operated by **Contractors, Producers** and **Consultants**.

It applies to three categories of materials testing:

1. Aggregate (Agg)
2. Hot-mix asphalt (HMA)
3. Portland cement concrete (PCC)

Private Quality Control Laboratories shall be approved as one or more of the following laboratory types:

1. Agg QC
2. HMA/Agg QC
3. HMA Design/Agg QC
4. PCC/Agg QC
5. Jobsite PCC QC

Private Quality Assurance Laboratories shall be approved as one or more of the following laboratory types:

1. HMA /Agg QA
2. PCC/Agg QA

Qualified Private Laboratories are permitted to conduct **Acceptance Program** testing for localities such as counties, cities and municipalities. Note, however, that **Qualified Private Laboratories** are not permitted to perform **QC** (including mix design) and acceptance testing on the same project.

2.0 PURPOSE

1. To ensure that **Private QC and QA Laboratories** are equipped and maintained at a uniform and high level of quality.
2. To establish uniform procedures for evaluating and approving **Private QC and QA Laboratories**.
3. To maintain a uniform standard for inspecting test equipment and test procedures.

3.0 AUTHORITY AND REFERENCES

3.1 **Authority.** Federal regulations (23 CFR Part 637) require the **Department** to establish an **Acceptance Program** for qualifying construction testing laboratories.

3.2 References.

1. IDOT Standard Specifications for Road and Bridge Construction.
2. IDOT Manual of Test Procedures for Materials.
3. IDOT QC/QA Specifications for Hot-Mix Asphalt and Portland Cement Concrete.
4. AASHTO, ASTM, and IDOT Test Procedures.
5. Code of Federal Regulations (23 CFR Part 637).
6. Department Policy MAT-15, "Quality Assurance Procedures for Construction."
7. IDOT Bureau of Local Roads and Streets Manual

4.0 DEFINITIONS

AASHTO - American Association of State Highway and Transportation Officials.

AASHTO R 18 - The **AASHTO** Standard for "Establishing and Implementing a Quality System for Construction Materials Laboratories." The principles and/or requirements of **AASHTO R 18** are used by the **Bureau** to administer the **Qualified Laboratory** program for **District** and **Private Laboratories**.

AASHTO RE:SOURCE - Administrator of the Accreditation, Laboratory Assessment, and Proficiency Sample Programs for **AASHTO** (formerly the American Materials Reference Laboratory or AMRL). Re:source is part of the Engineering and Technical Services Division of **AASHTO**.

ACCEPTANCE PROGRAM – All factors that comprise the Department's determination of the quality of the product as specified in the contract requirements. These factors include verification (**QA**) sampling, testing, and inspection and may include results of **QC** sampling and testing.

ACCREDITED LAB - A laboratory that is currently accredited by the **AASHTO** Accreditation Program (AAP) or other accrediting body recognized by **FHWA**.

ASTM - American Society for Testing Materials.

ASTM C 1077 - The **ASTM** "Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation" The principles and/or requirements of **ASTM C 1077** are used by the **Bureau** to administer the **Qualified Laboratory** program for **District** and **Private Laboratories**.

BUREAU - Central Bureau of Materials (CBM), Illinois **Department** of Transportation.

BUREAU LABORATORY - The **Department's** central laboratory maintained and operated by the **Bureau**. The **Bureau Laboratory** administers the **Qualified Laboratory** program for **District** and **Private Laboratories**.

CCRL – Cement and Concrete Reference Laboratory.

CONSULTANT - A private firm which performs construction materials testing for the **Department**, **Producer**, or **Contractor**. **Department** prequalification and **AASHTO** accreditation requirements apply where **Department** construction testing is performed directly for the **Department** under a **Department** contract or subcontract.

CONTRACTOR - The individual, firm, partnership, joint venture, or corporation contracting with the **Department** for performance of prescribed work.

DEPARTMENT - Illinois Department of Transportation (IDOT), including its **Districts** and Central Bureau offices.

DISTRICT - District office, Illinois **Department** of Transportation.

DISTRICT LABORATORY - A **Department** laboratory that is operated by a **District**.

FHWA - Federal Highway Administration.

FIELD TESTS - Tests that may be performed outside of a laboratory. For example, a portland cement concrete (PCC) or hot-mix asphalt (HMA) test performed at the jobsite.

INDEPENDENT ASSURANCE – Activities that are an unbiased and independent evaluation of all the sampling and testing (or inspection) procedures used in the quality assurance program. [IA provides an independent verification of the reliability of the acceptance (or verification) data obtained by the agency and the data obtained by the contractor. The results of IA testing or inspection are not to be used as a basis of acceptance. IA provides information for quality system management.] Policies and procedures contained in this memorandum are also an aspect of independent assurance.

LOCAL AGENCY - Governmental agency such as a county, city, or municipality.

NIST - National Institute for Standards and Technology.

PRIVATE LABORATORY - Any construction materials testing or design laboratory not operated by the **Department** or a **Local Agency**. This includes **Contractor**, **Producer**, or **Consultant** laboratories performing **Quality Control**, **Quality Assurance**, acceptance, **Independent Assurance**, or any other required or contracted testing on a **Department** project.

PRODUCER - An individual or business entity providing materials and/or products for performance of prescribed work.

QUALIFIED LABORATORY - A laboratory that is inspected and approved by the **Department**. FHWA's regulations (23 CFR 637.203) define these as *Laboratories that are capable as defined by appropriate programs established by each state transportation department. As a minimum, the qualification program shall include provisions for checking test equipment, and the laboratory shall keep records of calibration checks.*

QUALIFIED PERSONNEL - Personnel with demonstrated and documented capability to perform the applicable inspection and testing. The minimum requirement for aggregate, hot-mix asphalt or portland cement concrete testing is successful completion of the prescribed **Department** Quality Management Training Program classes. (Note: Additional personnel or experience requirements may apply to labs performing professional service work for the **Department**, e.g. Professional Engineer (P.E.) registrations, resumes, documented experience. When required, such notice will be provided in the prequalification process or solicitation notice.)

QUALITY ASSURANCE (QA) - All those planned and systematic actions necessary to provide adequate **Department** confidence that materials; manufactured, fabricated or constructed items; processes; products; designs; conducted test procedures; etc. will satisfy the requirements of the **Specifications**, **Quality Control Plan**, etc., as applicable.

QUALITY CONTROL (QC) - The sum total of activities performed by a **Producer**, **Contractor**, **Consultant**, **Manufacturer**, etc. to make sure materials; manufactured, fabricated or constructed items; processes; products; designs; conducted test procedures; etc. will satisfy the requirements of the **Specifications**, **Quality Control Plan**, etc., as applicable.

QUALITY ASSURANCE TESTING CONSULTANT – A Professional Engineering firm that is prequalified by the **Department** to perform field and/or laboratory tests for the **Department**. Required tests for **Quality Assurance Testing Consultants** are listed in Attachment A Table 2.

QUALITY ASSURANCE LABORATORY - Any laboratory used for **Quality Assurance** testing (**Department** tests) required by the **Department**. Required tests for **Quality Assurance Laboratories** are listed in Attachment A Table 2.

QUALITY CONTROL LABORATORY - Any laboratory used for **Quality Control** testing (**Contractor** or **Producer** tests) required by the **Department**. Required tests for **Quality Control Laboratories** are listed in Attachment A Table 1.

QUALITY CONTROL MANAGER - A **Consultant** or an employee of a **Contractor**, **Producer**, **Manufacturer**, etc. who is responsible for compliance with the **QC/QA** requirements in a **Department** contract or policy.

STATE - The state of Illinois.

SPECIFICATIONS - Specifications for materials; manufactured, fabricated or constructed items; processes; products; designs; conducted test procedures, etc. which includes the **Standard Specifications**, supplemental specifications and recurring special provisions, highway standards, shop drawings, contract plans, project special provisions, **AASHTO Specifications**, **ASTM Specifications**, etc., as applicable.

STANDARD SPECIFICATIONS - The **Department's** Standard Specifications for Road and Bridge Construction.

TECHNICAL MANAGER - The individual with responsibility for the overall operations, condition, and maintenance of the **Private Laboratory**. The **Technical Manager** shall be identified in writing. The **Technical Manager** is not required to be the **QC Manager** defined in the contract. However, the **Technical Manager** shall be familiar with the **Quality Control** testing requirements and the specified equipment.

5.0 PRIVATE LABORATORY REQUIREMENTS

5.1 Personnel Qualifications/Responsibilities.

5.1.1 All testing for **Department** contracts shall be performed by **Qualified Personnel** as specified in the contract. This includes any testing related to **Quality Assurance**, **Quality Control** and **Independent Assurance**.

5.1.2 The **Department** will maintain a computer database of **Qualified Personnel** who have successfully passed the appropriate Quality Management Training Program classes.

5.2 Facilities and Equipment.

5.2.1 The **Department** will approve all **Private Laboratories** used on **Department** projects.

5.2.2 Each **Private Laboratory** shall maintain the equipment and facilities necessary to perform the tests required for each laboratory type it is approved for. Lists of required **Private Laboratory** test capabilities for each **Qualified Laboratory** type are provided in Tables 1 and 2 located in Attachment A.

5.2.3 Each **Private Laboratory** shall have adequate floor space to efficiently conduct the required tests for each laboratory type it is approved for. Minimum floor space requirements are provided under "Model Quality Control Plans" in Appendices B and C of the Manual of Test Procedures for Materials.

5.2.4 Each **Private Laboratory** shall have HVAC equipment capable of maintaining a room temperature of 20 to 30° C (68-86° F). A **Private Laboratory** that performs only aggregate gradation and/or aggregate moisture testing is exempt from this requirement.

5.2.5 Each **Private Laboratory** shall maintain, at a minimum, the required equipment for each laboratory type it is approved for as outlined in the appropriate appendix to the Manual of Test Procedures for Materials. Appendix D3 applies to aggregate equipment, Appendix C3 applies to portland cement concrete equipment, and Appendix D4 applies to hot-mix asphalt equipment.

6.0 QUALITY SYSTEM CRITERIA

6.1 **AASHTO R 18 and ASTM C 1077.** Each **Private Quality Assurance Laboratory** shall maintain **AASHTO** accreditation for the required tests outlined in Attachment A Table 2 for each laboratory type it is approved for. The implemented quality system shall be

according to **AASHTO R 18** for HMA/Agg labs, and **AASHTO R 18** and **ASTM C 1077** for PCC/Agg labs.

6.2 **Technical Manager.** Each **Private Laboratory** shall have a **Technical Manager** (however titled) who has overall responsibility for the technical operations of the **Private Laboratory**. The **Technical Manager** shall be responsible for equipment maintenance, calibration, standardization, verification and checks; maintaining records; and ensuring that current test procedures are utilized. If the **Private Laboratory** is prequalified in a Professional **Consultant** service category, a licensed Illinois Professional Engineer shall have direct supervision of the laboratory.

6.3 **Equipment Calibration, Standardization, Verification and Checks.** The **Private Quality Control Laboratory** shall calibrate, standardize, verify or check all testing equipment associated with tests performed for each laboratory type it is approved for according to Attachment A Table 3. Heavy use or specific test requirements may require more frequent intervals than those given in Attachment A Table 3. **Department** verification of **Private Quality Control Laboratory** equipment shall not be construed as part of, or substitute for, equipment calibration, standardization, verification or check requirements, except for **Department** verification of the gyratory compactor using the DAV-2 and **Department** verification of the gyratory molds using the bore gauge.

The **Private Quality Assurance Laboratory** shall meet the requirements listed above for the **Private Quality Control Laboratory** for each laboratory type it is approved for. In addition, the **Private Quality Assurance Laboratory** shall calibrate, standardize, verify or check all equipment associated with the tests for which the **Private Quality Assurance Laboratory** is accredited according to **AASHTO R 18** and **ASTM C 1077**, as applicable.

6.4 **Department Proficiency Testing.** **Private Laboratory** qualifications may include round-robin proficiency testing conducted by the **Department**. Results of proficiency testing may be considered in the overall evaluation of the **Private Laboratory** to conduct specific tests.

6.5 **Records.**

6.5.1 Test Records. Each **Private Laboratory** shall maintain test records which contain sufficient information to permit verification of any test report.

6.5.2 Laboratory Quality Records. Each **Private Laboratory** shall maintain documentation of internal quality controls. At a minimum, the records shall include:

1. Documentation of assignment of personnel responsible for internal quality controls.
2. Documentation of equipment calibration, standardization, verification and checks.
3. All documentation shall be maintained and available for **Department** inspection for a period of three years.

6.5.2.1 Equipment Calibration, Standardization, Verification and Check Records. Calibration, standardization, verification and check records shall include the minimum information listed below. **AASHTO R 18** and **ASTM C 1077** provide additional guidance for recording calibration, standardization, verification and check records for testing equipment.

1. Description.
2. Model & Serial Number.
3. Name of person calibrating, standardizing, verifying or checking.
4. Equipment used for calibration, standardization, verification or checks (e.g., standard weights, proving rings, thermometers).
5. Date calibrated, standardized, verified, or checked & next due date.
6. Reference procedure used.
7. Results of calibration, standardization, verification or checks.

6.5.3 Proficiency Sample Records. Each **Private Laboratory** shall retain results of participation in any proficiency sample program, including the documentation of steps taken to determine the cause of poor results and corrective action taken.

6.6 **Publications.** Each **Private Laboratory** shall maintain current copies or electronic access to the required test procedures for each laboratory type it is approved for. Each **Private Laboratory** shall maintain a current copy or electronic access to the Manual of Test Procedures for Materials.

7.0 LABORATORY INSPECTIONS

7.1 **General.** The **Department** will approve **Private Quality Control** and **Quality Assurance Laboratories** by inspection and other requirements, as applicable.

7.1.1 Aggregate and Jobsite PCC Private QC Laboratories. Initial inspections and re-inspections will be performed by the District.

7.1.2 All Other Private Laboratories. Initial inspections are performed by the Bureau. Re-inspections are performed by the District.

7.1.3 Initiation of the prequalification process with the Bureau of Design and Environment is required prior to initial **District** pre-inspection according to Subsection 7.4.3 and initial **Bureau** inspection according to Subsection 7.4.4 for **Private Laboratories** seeking to become a **Quality Assurance Testing Consultant**.

7.2 **AASHTO Accredited Private Quality Assurance Laboratories.**

7.2.1 Current **AASHTO** accreditation as well as providing **Departmental** access to the results of participation in the **AASHTO** Proficiency Sample Program is a prerequisite for beginning the prequalification process for a **Private Laboratory** to become a **Quality Assurance Testing Consultant**. Other prerequisites may be found in the prequalification instructions and forms. **AASHTO re:source** shall provide accreditation assessment for HMA/Agg **QA Laboratories**. **CCRL** shall provide accreditation assessment for PCC/Agg **QA Laboratories**. Instructions for providing the **Department** access to a **Private Laboratory's** Proficiency Sample Program results can be found in Attachment B.

7.2.2 **AASHTO** accreditation does not waive the right of the **Department** to conduct inspections and/or re-inspections.

7.3 **Initial Private Laboratory Inspection Scope.**

1. Facilities - Physical and environmental conditions.
2. Equipment - Test apparatus for specification compliance.
3. Documentation - Calibration, standardization, verification and check records.
4. Personnel - A review of **Qualified Personnel** credentials.
5. Observation - The **Private Laboratory** may be required to demonstrate required tests. Some test procedures, such as **Field Tests**, may be evaluated through discussion with laboratory personnel.
6. Report - The **Private Laboratory** will be provided with a report listing those tests for which it is approved. The report will note deficiencies.

7.4 **Initial Private Laboratory Inspection Procedure.**

7.4.1 The **Private Laboratory** shall submit a written request for an inspection to the **District**. The request shall indicate the following:

1. The location of the **Private Laboratory**.
2. The type of **Private Laboratory**, i.e., Agg QC, PCC/Agg QC, HMA /Agg QA, etc.
3. The name of the **Technical Manager** who will be present for the inspection.
4. The date the **Private Laboratory** will be ready for inspection.

7.4.2 The **District** will notify the **Bureau Laboratory** of the inspection request. **Bureau** personnel will establish a tentative date to perform the inspection.

7.4.3 The **District** will perform a pre-inspection approximately seven calendar days before the **Bureau** inspection. The **District** will verify that the **Private Laboratory** is ready for inspection and notify the **Bureau**.

7.4.4 **Bureau** personnel will perform the inspection and prepare a preliminary report. Standard inspection forms and a preliminary report, developed and maintained by the **Bureau Laboratory**, will be used.

7.4.5 **Bureau** personnel will assign identification numbers to all test equipment. Unless a **District** has an established numbering system, the following sequences will be used:

Sieves

e.g., IL07 -1418-01

where: IL = State

07 = inspection year

1418-01 = Producer/Supplier Number

Sieves are engraved on the inside of the bottom lip directly beneath the label.

HMA Equipment

e.g., IL07B1 - 123

where: IL = State

07 = inspection year

B = hot mix asphalt (bituminous)

1 = district number

123 = sequential numbers

PCC Equipment

e.g., IL07C1 - 123

where: IL = State

07 = inspection year

C = concrete

1 = district number

123 = sequential numbers

Note: The numbering system prior to 2007 was IL07-123 for HMA and IL07CND1-123 for PCC. The change was made to make the numbering system more uniform.

- 7.4.6 **Bureau** personnel will perform a close-out with the **Technical Manager** and the **District** representative. The **Technical Manager** and the **District** will be given a copy of the preliminary report.
- 7.4.7 If a review of the preliminary report indicates there are no deficiencies, the **Bureau** will provide written notification to the **Private Laboratory** indicating the **Private Laboratory** is now an approved **Quality Control** or **Quality Assurance Laboratory**. The notification will include an equipment list. A copy of the notification will be provided to the **District**.
- 7.4.8 If the preliminary report indicates there are deficiencies, the **Bureau** will provide written notification to the **Private Laboratory**, indicating the deficiencies and that corrective action is required. A copy of the written notification will be provided to the **District**.
- 7.4.9 After correction of all cited deficiencies, the **Private Laboratory** shall notify the **District**. The **District** will inspect the **Private Laboratory** to verify the deficiencies have been corrected and will notify the **Bureau** in writing.
- 7.4.10 The **Bureau** will provide written notification to the **Private Laboratory**, indicating the **Private Laboratory** is now an approved **Quality Control** or **Quality Assurance Laboratory**. The notification will include an equipment list. A copy of the written notification will be provided to the **District**.
- 7.4.11 Uncorrected deficiencies will not be waived. Equivalent equipment specifications may be approved only with the written approval of the **Bureau's** Engineer of Concrete, Soils, and Metals.
- 7.5 **Initial Private Aggregate Quality Control Laboratory Inspection.** For aggregate and Jobsite PCC **Private Quality Control Laboratories**, the procedures outlined in 7.4 shall

be followed, except **District** personnel will perform the inspection instead of personnel from the **Bureau**.

7.6 Re-Approval of Approved Private Laboratories.

7.6.1 The re-inspection of **Private Laboratories** shall be conducted at intervals deemed appropriate by the **District**. The interval between inspections shall not exceed two calendar years. The **District's** evaluation may include the following:

1. Physical inspection of the laboratory facility and equipment.
2. Review of the **Private Laboratory's** internal quality plan and documentation in accordance with this policy and those parts of **AASHTO R 18** and **ASTM C 1077** incorporated by this policy.
3. Observations of tests performed by **Qualified Personnel**.
4. Results of split sample testing between the **Private Laboratory** and the **District**.
5. Results of proficiency sample testing programs conducted by the **Department**.
6. Overall past performance and experience.

7.6.2 The **District** may not waive any requirements for **Private Laboratories** or test equipment for required tests.

7.6.3 The **District** shall issue a letter of re-approval to the **Private Laboratory**, or provide a written and itemized deficiency list. The **Private Laboratory** shall notify the **District** when deficiencies are corrected and ready for re-inspection.

7.6.4 At any time, if the **District** identifies deficiencies in the facility, equipment, or test procedures that could affect the results of any **QC** or **QA** tests, the **District** will require the **Private Laboratory** to take immediate action to correct the deficiency.

8.0 EXEMPTIONS – AASHTO ACCREDITATION PROGRAM

If a **Private Laboratory** maintains current accreditation through the **AASHTO** Accreditation Program (AAP) for the appropriate test procedures, the **District** may waive the re-inspection requirements of this policy. To enact the waiver, the **Private Laboratory** shall provide copies of inspection reports and proficiency sample results to the **District**. This waiver does not apply to the initial inspection requirements, including the required equipment list.

9.0 LABORATORY DATABASE

The **Department** will maintain a computer database to monitor the approval status of **Private Laboratories**. The database will include the following information:

1. Laboratory Codes (**Department**, **Producer**, etc.)
2. Responsible **District**
3. Type Laboratory (Agg QC, HMA/Agg QC, HMA Design/Agg QC, PCC/Agg QC, Jobsite PCC QC, HMA/Agg QA, or PCC/Agg QA)
4. Demographics (Address, etc.)
5. Date Inspected
6. Approval Status

10.0 CLOSING NOTICE

Archived versions of this policy memorandum may be examined by contacting the **Bureau**.

The current **Bureau** Chief of Materials has approved this policy memorandum. Signed documents are on file with the **Bureau**.

TABLE 1
PRIVATE QUALITY CONTROL LABORATORY TESTS

AGGREGATE TESTS	<u>PROCEDURE</u>	<u>PRIVATE QC LAB TYPE</u>					TITLE
	Illinois Test Procedure (ITP)	AGG	HMA QC	HMA DESIGN	PCC QC	Jobsite PCC QC	
	ITP 2	√	√	√	√		Sampling of Aggregates
	ITP 11	√	√	√	√		Materials Finer Than 75-μm (No. 200) Sieve in Mineral Aggregates by Washing
	ITP 19	√ ¹			√		Bulk Density ("Unit Weight") and Voids in Aggregate
	ITP 27	√	√	√	√		Sieve Analysis of Fine and Coarse Aggregate
	ITP 84	√ ²					Specific Gravity and Absorption of Fine Aggregate
	ITP 85	√ ²					Specific Gravity and Absorption of Coarse Aggregate
	ITP 248	√	√	√	√		Reducing Samples of Aggregate to Testing Size
	ITP 255	√	√	√	√		Total Evaporable Moisture Content of Aggregate by Drying
	ITP 306				Required if developing Mix Designs		Voids Test of Coarse Aggregate for Concrete Mixtures

Note 1: Required for laboratories that test Air Cooled Blast Furnace Slag.

Note 2: Required for laboratories that run the Department's Slag Producers' Self-Testing Program

TABLE 1 (CONT'D)
PRIVATE QUALITY CONTROL LABORATORY TESTS

HOT-MIX ASPHALT TESTS	<u>PROCEDURE</u>		<u>PRIVATE QC LAB TYPE</u>		TITLE
	AASHTO (Illinois Modified)	ASTM (Illinois Modified)	HMA QC	HMA DESIGN	
	T 30 (IL)		√	√	Mechanical Analysis of Extracted Aggregate
	T 164 (IL)		√ ³ Or T 287 or T 308 ⁴	√ ³	Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt (HMA)
	T 166 (IL)		√	√	Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens
	T 209 (IL)		√	√	Theoretical Maximum Specific Gravity (Gmm) and Density of Hot Mix Asphalt Paving Mixtures
	T 245 (IL)				Resistance to Plastic Flow of Asphalt Mixtures Using Marshall Apparatus
	T 283 (IL)			√	Resistance of Compacted Hot Mix Asphalt (HMA) to Moisture-Induced Damage
	T 287 (IL)		√ Or T 164 or T 308 ⁴		Asphalt Binder Content of Asphalt Mixtures by the Nuclear Method
	T 308 (IL)		√ Or T 164 or T 287 ⁴	√	Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method
	T 312 (IL)		√	√	Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
	D 2950 (IL)		√		Determination of Density of Bituminous Concrete in Place by Nuclear Methods – Field Test; not observed during Lab Inspection

Note 3: Method A or B shall be used for quantitative extraction. Method A or E shall be used to recover binder for qualitative analysis. If a QC HMA Mix Design laboratory does not have the ability to perform AASHTO T 164 (IL), outsourcing the test to a qualified QC or QA laboratory will be permitted.

Note 4: Determined by which piece of equipment is more appropriate for the lab to determine asphalt content.

TABLE 1 (CONT'D)
PRIVATE QUALITY CONTROL LABORATORY TESTS

PORTLAND CEMENT CONCRETE TESTS	<u>PROCEDURE</u>		<u>PRIVATE QC LAB TYPE</u>		TITLE
	AASHTO (Illinois Modified)/Illinois Test Procedure (ITP)	ASTM (Illinois Modified)	PCC QC	Jobsite PCC QC	
	R 39 (IL)		Required if developing mix designs.		Making and Curing Concrete Test Specimens in the Laboratory
	R 60 (IL)		√	√	Sampling Freshly Mixed Concrete
	T 22 (IL)		√ ⁵ Either T 22 or T 177		Compressive Strength of Cylindrical Concrete Specimens
	T 23 (IL)		√	√	Making and Curing Concrete Test Specimens in the Field
	T 119 (IL)		√	√	Slump of Hydraulic Cement Concrete
	T 121 (IL)				Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
	T 152 (IL)		√	√	Air Content of Freshly Mixed Concrete by the Pressure Method - Type A or B Air Meter
	T 177 (IL)		√ ⁵ Either T 22 or T 177		Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)
	T 196 (IL)				Air Content of Freshly Mixed Concrete by the Volumetric Method
	T 231 (IL)		Either T 231 or C 1231		Capping Cylindrical Concrete Specimens
		C 1064 (IL)	√	√	Temperature of Freshly Mixed Hydraulic Cement Concrete
		C 1231 (IL)	Either T 231 or C 1231		Use of Unbonded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders

Note 5: For an exception to the strength testing requirement of performing compressive or flexural testing (Example: Labs at Concrete Producer Plants), refer to the Department's "Required Sampling and Testing Equipment for Concrete" document and check with District for approval of exception.

TABLE 2
REQUIRED TESTS – QUALITY ASSURANCE TESTING CONSULTANTS ^{1,2}

PROCEDURE		REQUIRED FOR PREQUALIFICATION			TITLE
		Private QA Lab Type: HMA/Agg and PCC/Agg			
Illinois Test Procedure (ITP)/ AASHTO	ASTM	IDOT QA	AAP On-Site Assessment	AAP Proficiency Sample Program	
AGGREGATE	ITP 2	√			Sampling of Aggregates
	ITP 11 T 11	√		√	Materials Finer Than 75-µm (No. 200)Sieve in Mineral Aggregates by Washing
	ITP 19 T 19	√		√	Bulk Density (“Unit Weight”) and Voids in Aggregate
	ITP 27 T 27	√		√	Sieve Analysis of Fine and Coarse Aggregates
	ITP 84 ³ T 84 ³	√		√	Specific Gravity and Absorption of Fine Aggregate
	ITP 85 ³ T 85 ³	√		√	Specific Gravity and Absorption of Coarse Aggregate
	ITP 248 R76	√		√	Reducing Samples of Aggregate to Testing Size
	ITP 255 T 255	√		√	Total Evaporable Moisture Content of Aggregate by Drying

Note 1: Compliance with IDOT test methods will be required for IDOT QA lab inspections. However, AASHTO re:source or CCRL lab inspections shall require compliance with the corresponding AASHTO or ASTM test methods.

Note 2: QA labs have the option to be HMA/Agg, PCC/Agg or HMA/PCC/Agg approved.

Note 3: Required for laboratories that run the Department’s Slag Producers’ Self-Testing Program.

TABLE 2 (CONT'D)
REQUIRED TESTS – QUALITY ASSURANCE TESTING CONSULTANTS ^{1, 2}

PROCEDURE		REQUIRED FOR PREQUALIFICATION			TITLE
		Private QA Lab Type: HMA/Agg			
Illinois Modified/ AASHTO	ASTM Illinois Modified	IDOT QA	AAP On-Site Assessment	AAP Proficiency Sample Program	
HOT-MIX ASPHALT	T 30 (IL) T 30	√	√	√	Mechanical Analysis of Extracted Aggregate
	T 164 (IL) T 164	√	√	√	Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt (HMA)
	T 166 (IL) T 166	√	√	√	Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens
	T 209 (IL) T 209	√	√	√	Theoretical Maximum Specific Gravity (Gmm) and Density of Hot Mix Asphalt Paving Mixtures
	T 245 (IL)				Resistance of Plastic flow of Asphalt mixtures Using Marshall Apparatus
	T 283 (IL) T 283	√	√		Resistance of Compacted Hot Mix Asphalt (HMA) to Moisture-Induced Damage
	T 287 (IL)	√ ⁴			Asphalt Binder Content of Asphalt Mixtures by the Nuclear Method
	T 308 (IL) T 308	√	√	√	Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method
	T 312 (IL) T 312	√	√	√	Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
	D 2950 (IL)	√			Density of Bituminous Concrete in Place by Nuclear Method – Field Test

Note 1: Compliance with IDOT test methods will be required for IDOT QA lab inspections. However, AASHTO re:source or CCRL lab inspections shall require compliance with the corresponding AASHTO or ASTM test methods.

Note 2: QA labs have the option to be HMA/Agg, PCC/Agg or HMA/PCC/Agg approved.

Note 4: Requirement determined on case-by-case basis by District in which lab is located.

TABLE 2 (CONT'D)
REQUIRED TESTS – QUALITY ASSURANCE TESTING CONSULTANTS^{1, 2}

PROCEDURE		REQUIRED FOR PREQUALIFICATION			TITLE	
		Private QA Lab Type: PCC/Agg				
Illinois Modified/ AASHTO/Illinois Test Procedure (ITP)	ASTM/Illinois Modified	IDOT QA	AAP On-Site Assessment	AAP Proficiency Sample Program		
PORTLAND CEMENT CONCRETE	C 192			√	Making and Curing Concrete Test Specimens in the Laboratory	
	R 60 (IL)		√		Sampling Freshly Mixed Concrete	
	C 172		√		Compressive Strength of-Cylindrical Concrete Specimens	
	T 22 (IL)	C 39		√	√	Making and Curing Concrete Test Specimens in the Field
	T 23 (IL)	C 31		√		Slump of Hydraulic Cement Concrete
	T 119 (IL)	C 143		√	√	Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
	T 121 (IL)	C 138		√	√	Air Content of Freshly Mixed Concrete by the Pressure Method-Type A or B Air Meters
	T 152 (IL)	C 231		√	√	Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)
	T 177 (IL)	C 293		√ ⁵		Air Content of Freshly Mixed Concrete by the Volumetric Method
	T 196 (IL)	C 173		6	8	Capping Cylindrical Concrete Specimens
	T 231 (IL)	C 617		6		Temperature of Freshly Mixed Hydraulic Cement Concrete
		C 1064 (IL) C 1064	√	√		Use of Unbonded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders
		C 1231 (IL) C 1231	√	√		Fine Aggregate Moisture Content by the Flask Method
	ITP 301		6			Aggregate Specific Gravity and Moisture Content by the Dunagan Method
	ITP 302		6			Fine or Coarse Aggregate Moisture Content by Pycnometer Jar Method
	ITP 303		6			Voids Test of-Coarse Aggregate for Concrete Mixtures
	ITP 306		7			

Note 1: Compliance with IDOT test methods will be required for IDOT QA lab inspections. However, AASHTO re:source or CCRL lab inspections shall require compliance with the corresponding AASHTO or ASTM test methods.

Note 2: QA labs have the option to be HMA/Agg, PCC/Agg or HMA/PCC/Agg approved.

Note 5: The AAP on-site assessment is not required for Illinois type portable beam breakers but is required for all other types of beam breakers. Additional information regarding use of portable PCC labs and their approval is provided in Department Policy MAT-15, "Quality Assurance Procedures for Construction".

Note 6: Test equipment shall be presented during an inspection if the consultant lab has the ability to perform the test.

Note 7: Test equipment shall be presented during an inspection if consultant lab has the ability to verify PCC mix designs.

Note 8: Test shall be performed if consultant lab has the ability to perform the test.

TABLE 3
EQUIPMENT CALIBRATION, STANDARDIZATION, VERIFICATION AND CHECK
SCHEDULE¹

EQUIPMENT	REQUIREMENT	MAX. INTERVAL (MONTHS)
AGGREGATE & GENERAL		
Agg. Unit Weight Measures	Standardize	12
Conical Molds, Tampers	Check Critical Dimensions	24
General Purpose Balances, and Scales	Commercial Service or Verification using standardized NIST traceable Masses	12
Standard Masses	Standardize	60
Mechanical Shakers	Check Sieving Thoroughness	12
Ovens	Standardize Thermometric Device	12
Coarse Sieves (Openings ≥ 4.75 mm)	Check Physical Condition and Dimensions of Openings	12
Fine Sieves (Openings <4.75 mm)	Check Physical Condition	12
Working Thermometers	Standardize with calibrated NIST traceable Reference Thermometer	12
Reference Thermometer	Calibrate	60
Timers	Check Accuracy	12
Calipers and Micrometers	Standardize	24
Caliper Checker (Gauge Blocks or Caliper Master)	Calibrate	60
HOT MIX ASPHALT		
Gyratory Compactor	Verify Angle ² , Pressure, and Height	Once a Month During Use
	Verify Angle using a DAV-2	12
Plates, Ram Face, and Molds	Check Critical Dimensions	12
Marshall Hammer	Check Physical Condition	12
	Standardize	36
Ignition Furnace	Standardize	Each Mix
Vacuum Pump	Check Pressure	12
Tensile Strength Machine	Standardize	12
Breaking Heads	Check Critical Dimensions	12
Pycnometers	Standardize Volume	12
Mixers	Check Physical Condition	12
Water Baths	Standardize	12
Extraction Equipment	Check Physical Condition	12
Residual Pressure Manometer	Standardize	12
Bore Gauge	Standardize	Each Use

Note 1: See AASHTO R 18 for equipment calibration, standardization, verification and check terminology definitions.

Note 2: See Manual of Test Procedures Appendix B.19 for permissible verification procedures.

TABLE 3 (CONT'D)
EQUIPMENT CALIBRATION, STANDARDIZATION, VERIFICATION AND CHECK
SCHEDULE¹

EQUIPMENT	REQUIREMENT	MAX. INTERVAL (MONTHS)
HOT MIX ASPHALT (CONT'D)		
Master Ring	Calibrate	60
Hamburg Wheel Tracking Machine		
Water Temperature	Verify	12
Speed	Verify	12
Wheel Weight	Verify	12
LVDT'S	Verify	12
PORTLAND CEMENT CONCRETE		
PCC Unit Weight Measures	Standardize	12
Air Meters (Pressure Type)	Standardize During Use	3 (Type B)
	Standardize	12 (Type A)
Air Meters (Volumetric Type)	Standardize	12
Compression & Flexural Testing Machine	Standardize	12
Capping Material	Check Strength	3 or New Shipment
Slump Cones	Check Critical Dimensions	12
Metallic Reusable Molds	Check Critical Dimensions	12
Single Use Molds	Check Dimensions	Each Shipment
Neoprene Pads	Check Physical Condition	Track Usage
Retaining Rings	Check Critical Dimensions and Planeness	12
Metal Stem Thermometers	Standardize with calibrated NIST traceable Reference Thermometer	12
Moist Room/Storage Tanks Recording Thermometer or Max/Min Thermometer	Standardize with calibrated NIST traceable Reference Thermometer	12

Note 1: See AASHTO R 18 for equipment calibration, standardization, verification and check terminology definitions.

Instructions for Providing Departmental Access to Results of Participation in the AASHTO Proficiency Sample Program for Quality Assurance Testing Consultants

Consultants seeking to become prequalified as a **Quality Assurance Testing Consultant** shall be accredited by **AASHTO**. Participation in the **AASHTO** Proficiency Sample Program is one of the requirements for accreditation. **Consultants** who are accredited by **AASHTO** shall also allow the **Department** access to their Proficiency Sample Ratings as part of the prequalification process.

To allow the **Department** access to these data from **AASHTO re:source** provided proficiency samples, **Consultants** should go to the **AASHTO re:source** website (<http://www.aashtoresource.org>) and follow the instructions given below:

1. Log into your account and navigate to your home page.
2. Using the green vertical menu on the left side of the page, click "My Specifiers"
3. Click "Search for Specifiers" at the top of the page
4. Using the drop-down menu, select "Illinois" as the State, or type in "Illinois Dept. of Transportation". A list of results should populate including the ILDOT option. It is important to type in the specifier name EXACTLY as shown or it won't find the Illinois Department of Transportation.
5. Click the green "Request" button. Confirm that you want to send a request.
6. The samples to be made available to the **Department** (with unlimited time periods) for evaluation shall be taken from Attachment A Table 2 and need only correspond to the QA Lab Type(s) a **Consultant** is seeking prequalification for.

To allow the **Department** access to these data from **CCRL** provided proficiency samples, **Consultants** should contact **CCRL** directly for assistance.